

Boyle's Law Problems

One Master: You to answer the following questions:

- 1) 1.00 L of gas at standard temperature and pressure is compressed to 0.75 L.
What is the new pressure of the gas?
- 2) In a combustion motor, the pressure of 0.020 liter of gas within the motor
rises to 4.0×10^5 atm. When the piston riding in the motor by the
explosion, the gas is released into the atmosphere where it exists at a pressure of
1.00 atm. What is the volume of the gas after the explosion?
- 3) Synthetic diamonds can be manufactured at pressures of 0.60×10^9 atm. If we
take 2.00 liter of gas at 1.00 atm and compress it to a pressure of 0.60×10^9
atm, what would be volume of the gas?
- 4) The highest pressure ever produced in a laboratory setting was about 1.0×10^9
atm. If we have a 1.0×10^3 liter sample of a gas at that pressure, then compress the
pressure to 1.0 equal to 1.000 atm, what would be the new volume of the gas?